

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 March 2002 (21.03.2002)

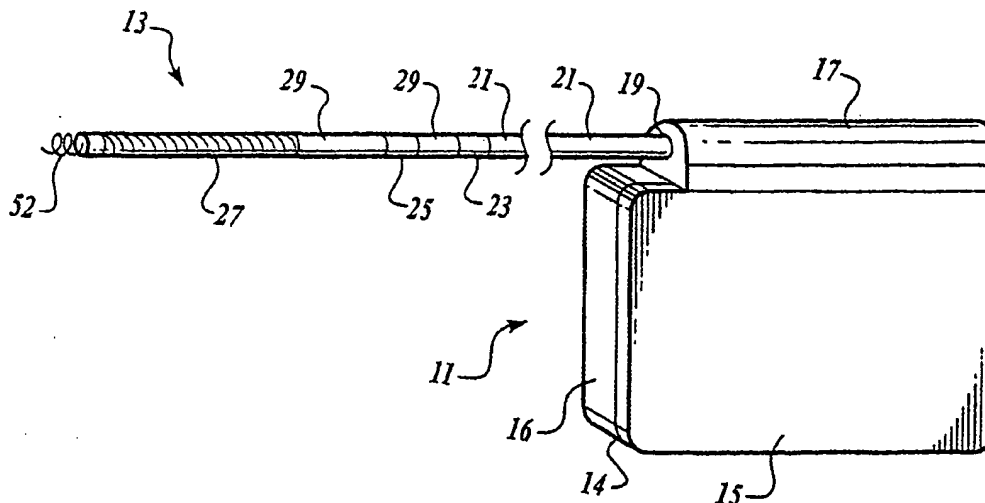
PCT

(10) International Publication Number  
**WO 02/22208 A3**

- (51) International Patent Classification<sup>7</sup>: A61N 1/39 (74) Agents: PETTIT, Jonathan, L. et al.; Brobeck, Phleger & Harrison, 12390 El Camino Real, San Diego, CA 92130 (US).
- (21) International Application Number: PCT/US01/29168
- (22) International Filing Date:  
14 September 2001 (14.09.2001) (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
09/663,607 18 September 2000 (18.09.2000) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): CAMERON HEALTH, INC. [US/US]: 924-A Calle Negocio, San Clemente, CA 92673 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): BARDY, Gust, H. [US/US]: 2518 Constance Drive West, Seattle, WA 98199 (US). CAPPATO, Riccardo [IT/IT]: Via Fluvio Testi, 22, I-44100 Ferrara (IT).
- Published:  
— with international search report

[Continued on next page]

(54) Title: SUBCUTANEOUS ONLY IMPLANTABLE CARIOVERTER-DEFIBRILLATOR AND OPTIONAL PACER



(57) Abstract: A subcutaneous implantable cardioverter-defibrillator is disclosed which has an electrically active canister which houses a source of electrical energy, a capacitor, and operational circuitry that senses the presence of potentially fatal heart rhythms. At least one subcutaneous electrode that serves as the opposite electrode from the canister is attached to the canister via a lead system. Cardioversion-defibrillation energy is delivered when the operational circuitry senses a potentially fatal heart rhythm. There are no transvenous, intracardiac, or epicardial electrodes. A method of subcutaneously implanting the cardioverter-defibrillator is also disclosed as well as a kit for conducting the method.

WO 02/22208 A3



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

**(88) Date of publication of the international search report:**

6 June 2002

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/29168

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61N1/39

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61N A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 366 496 A (DAHL ROGER W ET AL) 22 November 1994 (1994-11-22) the whole document --- -/--	1,4,13



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

\* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

19 March 2002

Date of mailing of the international search report

26/03/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Ferrigno, A

## INTERNATIONAL SEARCH REPORT

International Application No

PC1/US 01/29168

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 385 574 A (HAUSER ROBERT G ET AL) 31 January 1995 (1995-01-31)	48,54, 55,61, 81,82, 88,99, 101,103, 111,113, 117,119, 121,122, 124
Y	the whole document	1,4,10, 11,13, 24,26, 27,44, 123
Y	US 5 603 732 A (DAHL ROGER W ET AL) 18 February 1997 (1997-02-18) cited in the application the whole document	1,4,10, 11,13, 24,26,27
Y	US 4 830 005 A (WOSKOW ROBERT M) 16 May 1989 (1989-05-16) the whole document	44
Y	US 5 129 392 A (MEHRA RAHUL ET AL) 14 July 1992 (1992-07-14) cited in the application the whole document	123
Y	EP 0 517 494 A (CARDIAC PACEMAKERS) 9 December 1992 (1992-12-09) the whole document	136
Y	WO 99 53991 A (ALZA CORP) 28 October 1999 (1999-10-28) the whole document	136
A	US 5 331 966 A (BENNETT TOM D ET AL) 26 July 1994 (1994-07-26) the whole document	25,86, 102,115

**FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-33,44-124

subcutaneous implantable cardioverter-defibrillator

2. Claims: 136,137

apparatus for implanting an implantable  
cardioverter-defibrillator

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/29168

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5366496	A	22-11-1994	NONE	
US 5385574	A	31-01-1995	US 5133353 A AT 168024 T AU 641224 B2 AU 7354591 A CA 2040800 A1 DE 69129716 D1 DE 69129716 T2 DK 453761 T3 EP 0453761 A1 ES 2120411 T3 JP 5064666 A US 6157860 A US 5713926 A US 6280462 B1 US 5916238 A	28-07-1992 15-07-1998 16-09-1993 07-11-1991 26-10-1991 13-08-1998 24-12-1998 19-04-1999 30-10-1991 01-11-1998 19-03-1993 05-12-2000 03-02-1998 28-08-2001 29-06-1999
US 5603732	A	18-02-1997	US 5545202 A US 5360442 A US 5203348 A CA 2027744 A1 DE 69026081 D1 EP 0460324 A2 JP 1851562 C JP 4040966 A JP 5067310 B US 5342407 A US 5230337 A	13-08-1996 01-11-1994 20-04-1993 07-12-1991 25-04-1996 11-12-1991 21-06-1994 12-02-1992 24-09-1993 30-08-1994 27-07-1993
US 4830005	A	16-05-1989	NONE	
US 5129392	A	14-07-1992	AU 649094 B2 AU 9090391 A CA 2095603 A1 DE 69106001 D1 DE 69106001 T2 EP 0563122 A1 WO 9211064 A1	12-05-1994 22-07-1992 21-06-1992 26-01-1995 27-04-1995 06-10-1993 09-07-1992
EP 0517494	A	09-12-1992	US 5300106 A AT 142117 T CA 2070514 A1 DE 69213336 D1 DE 69213336 T2 EP 0517494 A2 HK 1007971 A1 JP 6339532 A	05-04-1994 15-09-1996 08-12-1992 10-10-1996 24-04-1997 09-12-1992 30-04-1999 13-12-1994
WO 9953991	A	28-10-1999	AU 3748899 A TW 442273 B WO 9953991 A1	08-11-1999 23-06-2001 28-10-1999
US 5331966	A	26-07-1994	AU 654552 B2 AU 1750692 A CA 2106378 A1 DE 69210395 D1 DE 69210395 T2	10-11-1994 02-11-1992 06-10-1992 05-06-1996 09-01-1997

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/29168

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5331966	A	EP 0578748 A1	19-01-1994
		JP 2655204 B2	17-09-1997
		JP 6505662 T	30-06-1994
		WO 9217240 A1	15-10-1992
-----			